ABSTRACT OF THE DISCLOSURE

A process for preparing the polyurethane derivative, the process including: providing a polyurethane having a urethane amino moiety, providing a multifunctional linker reagent of a formula: LG-R_L-$(FG)_n$, wherein n is an integer from 1 to 3, FG is a functional group, which is a halogen, a carboxyl group, a sulfonate ester, or an epoxy group, LG is a leaving group, which is a halogen, a carboxyl group, a sulfonate ester, or an epoxy group, and R_L is an (n+1)-valent organic radical having at least one carbon atom; providing a protected thiol-containing reagent of a formula R-C(O)SH, or a salt thereof, wherein R is a C_1 to C_6 alkyl group; reacting the multifunctional linker reagent with the urethane amino moiety to form a polyurethane substituted with at least one substituent group of a formula: $-R_L$-$(FG)_n$; reacting the polyurethane with a protected thiol-containing reagent to form the polyurethane derivative.